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ITT Fluid Technology
Corporation

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December 28, 1993

CALIFORNIA REGIONAL WAT OUALITY CONTROL BOARD LOS ANGELES REGION

Mr. William Jones, M.S., Chief Investigative Section, Hazardous Materials Control Program County of Los Angeles Fire Department 5823 Rickenbacker Road Commerce, CA 90048

SUBJECT: 1200 S. FLOWER STREET, BURBANK, CA 91502

Pipeline Evaluation Plan, dated December 20, 1993

Dear Mr. Jones:

The purpose of this letter is to submit the above referenced work plan for approval prior to implementation.

The scope of work presented in this plan is designed to allow for a limited evaluation of several vertical pipelines present in the slab foundation in the immediate vicinity of the former oil room (a small portion of former Building #2). It will be necessary to complete the work outlined in the enclosed plan prior to the implementation of the slab protection plan. As you may recall, the slab protection plan was also recently submitted to the LAFD for approval prior to implementation.

As always, this work will be conducted in accordance with the site-specific Health and Safety plan. ITT is eager to complete this work before the start of the rainy season, and we would appreciate your prompt review of this plan. Should you have any questions or concerns, please feel free to contact me at (818) 953-2119.

Very Truly Yours, ITT

Teresa P. Olmsted Manager, Environmental Projects

CC: G. Kwey/A. Veloz - LARWQCB
P. Kani - LAFD
ITT Distribution
LARWQCB file
LAFD file

lfd1228

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PIPELINE EVALUATION PLAN

ITT Fluid Products Corporation Aerospace Controls Division Burbank, CA

Prepared by

ENVIRON International Corporation Irvine, CA

PIPELINE EVALUATION PLAN

The scope of work presented in this plan has been designed to delineate the linear trend of several pipes in the immediate vicinity of the former oil room at the ITT facility located at 1200 South Flower Street, in Burbank, California (site). Buildings and parking lots formerly occupied most of the site, but many of the buildings have now been demolished. Subsurface features, such as underground storage tanks (USTs) have been removed from the site as part of previous work plans that have been conducted at the site. A number of investigations of subsurface conditions at the Facility have been conducted in recent years; a listing of reports prepared in association with those investigations is presented in Appendix A. Following the recent demolition of buildings 1, 2, 3, and 7, which included the area of the former oil room, there are currently several vertical pipelines in variety of diameters that are present in the slab foundation at the site. The nature of the pipelines are currently unknown, however, it is anticipated that the pipelines are related to the previous UST that was removed from the immediate vicinity of the former oil room.

OBJECTIVE

The objective of the scope of work presented in this work plan is to make a preliminary evaluation of:

- Nature of the pipelines; and
- Potential subsurface structures in the immediate vicinity of the former oil room at the site.

SCOPE OF WORK

The scope of work that is proposed to meet the objectives includes the following tasks:

Task 1: Collection and Analyses of Liquid Samples

It is anticipated that up to six samples of free standing liquid currently present in the pipes will be collected for laboratory analyses. Liquid samples will be collected using a 1-inch diameter bailer and will then be placed in laboratory-supplied containers. Liquid samples will be retained in an ice chest cooled to a temperature of approximately 40 degrees Fahrenheit prior to delivery to a State-certified hazardous waste laboratory for chemical analysis. Chain-of-custody procedures will be used to document sample handling and transport. The free standing liquid currently present will be pumped out of the pipes and will be placed in Department of Transportation (DOT)-approved 55-gallon drums. Drums will be then sealed and labeled appropriately and will be stored on site pending appropriate disposal by ITT Corporation.

It is anticipated that up to six samples will be analyzed for total petroleum hydrocarbons using gasoline, diesel, and oil standards, volatile halocarbons, and polychlorinated biphenyls in accordance with the Environmental Protection Agency (EPA) Method Nos. 8015 (Modified), 8010, and 8080 respectively. In addition, up to two composite samples (three sub-samples each) will also be analyzed for Title 22 California Code of Regulation Metals in accordance with EPA Method Nos. 6010/7000.

Task 2: Geophysical Survey

A geophysical survey will be conducted by Spectrum Environmental Services, Inc. (Spectrum) of San Fernando, California under subcontract to ENVIRON. The approach that will be initially used by Spectrum will be to insert a probe into each of the pipes. This should allow Spectrum to evaluate if pipes are related to USTs. The probe is constructed of polypropylene and is normally coiled so as to retain its curvature. The probe will be inserted into a pipe and as it continues downward, if the pipe is the fill pipe related to a UST, the end of the probe will curve into the potential UST. If a UST is encountered, the probing will continue to evaluate the UST size, orientation, and burial depth. If the pipe is not related to a UST, it is expected that the probe will continue downward and stop at an elbow. At this point, an electromagnetic (EM) utility locating methods will be used to trace the pipe laterally. The EM methods consist of a radio-frequency current that will be conducted onto each pipe and the signal will then be propagated along its length. In addition, ground penetrating radar (GPR) will be used to evaluate if buried subsurface structures such as USTs are present beneath the foundation at the former oil room.

Task 3: Data Evaluation and Report of Findings

After completion of Tasks 1 and 2, the data will be evaluated and a report will be prepared and submitted that will include a summary of the investigation, the procedures that were used, the findings, and our conclusions and recommendations.

HEALTH AND SAFETY PLAN

All work that will be conducted by ENVIRON and Spectrum as part of this scope of work will be in accordance with Site Health and Safety Plan presented in Appendix B.

SCHEDULE

The field work will be scheduled based on the earliest availability of Spectrum following the approval by the Fire Department. It is anticipated that approximately one week will be required for contractor notification and mobilization. Field work will require one day. Analytical testing will require approximately two weeks. Data analysis and reporting will require approximately two weeks. Therefore the time needed to complete the work is approximately five weeks, depending upon the amount of time needed to mobilize the contractor.

APPENDIX A

List of Previous Investigations

REPORTS AND DOCUMENTS RELATED TO ITT BURBANK SITE INVESTIGATIONS ON FILE WITH THE LARWQCB

Document	Subject/Title	Date
A.L Burke (ALB)	Preliminary Site Investigation	August 1987
ALB	Preliminary Site Investigation Buildings 2,3, and 8 Final Report	August 21, 1987
ALB	Closure and Additional Site Investigation Cost Estimates	August 21, 1987
ALB	Draft Final Report on Phase 2 Investigation	November 6, 1987
ALB	Closures for Process Sumps in Buildings 2 & 3	November 10, 1987
ALB	Workplan & Estimates for Closure of Building 8	January 4, 1988
ALB	Closure of Sump in Building 5	February 1988
OccuHealth Consultants	Building 12 Mercury Removal	February 23, 1988
ALB	Finalized Closure Plan for Sump in Building 5	March 10, 1988
ALB	Investigation of Contamination	April 1988
ALB	Overview of Investigation and Closure Actions	April 1988
ITT	Application for Closure	May 30, 1988
ALB	Site Characterization and Closure Workplan Draft	July 1988 -
OccuHealth Consultants	Asbestos Removal in Buildings 3 & 12	August 4, 1988
ALB	Workplan for ITT Building 8	October 6, 1988
ALB	Investigation of Subsurface Contamination	September 16, 1988
ALB	Scope of Work, ITT Projects	September 16, 1988
ALB	Subsurface Investigation Draft	November 1988
ALB	ITT Building 8 Decontamination & Demolition Progress Report #1	December 13, 1988
ALB	Progress Report - Building 3	December 27, 1988
ALB	ITT Building 8 Decontamination & Demolition Progress Report	January 12, 1989
ALB	Progress Report for Building 3	January 30, 1989
ALB	Progress Update, Building 8, ITT	January 30, 1989
ALB	ITT Building & Decontamination & Demolition Progress Report #3	February 17, 1989

REPORTS AND DOCUMENTS RELATED TO ITT BURBANK SITE INVESTIGATIONS ON FILE WITH THE LARWQCB

Document	Subject/Title	Date
ALB	Progress Report #2, Building 3, Preliminary	March 1989
ALB	ITT Building 7 Decontamination & Demolition Progress Report #4	May 2, 1989
ALB	Remediation, ITT Building 8, Final In-House Draft Report	August 3, 1989
Weston	Site Characterization Report and Action Plan for ITT Facility	November 2, 1989
ESI	Workplan, Transformer Clean-Up	
Weston	Soil Gas Screening (Results) of the ITT Aerospace Controls, Burbank	March 27, 1990
Weston	Summary of Asbestos & Residue Sampling of Buildings 1, 2 & 3	March 28, 1990
Weston	Dust Control at Building 8	i ,
Weston	Preliminary Work Plan for Soil & Ground Water Characterization	June 14, 1990
Weston	Preliminary Work Plan for Soils & Groundwater Contamination - Final revised from June 14, 1990 Draft	November 12, 1990
ICF KE	Results of Preliminary Groundwater & Soils Investigation	August 14, 1991
ICF KE	Work Plan for Building 8, ITT Facility	October 15, 1991
ICF KE	Fourth Quarter Sampling and Analysis Report, October - December 1991	January 1992
ICF KE	First Quarter Sampling and Analysis Report, January - March 1992	April 1992
IT Corporation	Health and Safety Plan for PCB Decontamination	June 22, 1992
	and Removal of Asbestos Containing Materials for the ITT Burbank Site	and July 6, 1992
ICF KE	Second Quarter Sampling and Analysis Report April - June 1992	July 1992
ICF KE	Building 8 PCB Sampling Program Report	August 1992
ICF KE	Third Quarter Progress Report July - September 1992	October 1992
ICF KE	Fourth Quarter Sampling and Analysis Report October - December 1992	January 1993

REPORTS AND DOCUMENTS RELATED TO ITT BURBANK SITE INVESTIGATIONS ON FILE WITH THE LARWQCB

Document	Subject/Title	Date
ICF KE	First Quarter Sampling and Analysis Report January - March 1993	April 1993
ICF KE	Supplemental Work Plan for Additional Work at the ITT Site	April 1993
ICF KE	Second Quarter Sampling and Analysis Report April - June 1993	July 1993
ENVIRON	Third Quarter Sampling and Analysis Report, ITT Fluid Products Corporation, Burbank/Glendale, California July - September, 1993, Volume 1 of 2	October 1993
ENVIRON	Third Quarter Sampling and Analysis Report, ITT Fluid Products Corporation, Burbank/Glendale, California July - September, 1993, Volume 2 of 2	October 1993
ENVIRON	Work Plan for a Subsurface Investigation of Petroleum Hydrocarbons in Shallow Soils	October 1993
ENVIRON	Annual Well Maintenance Program	November 1993
ENVIRON	Slab Protection Plan, ITT Fluid Products, Corp Aerospace Controls Division, Burbank, CA	December 1993
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APPENDIX B

Site Health and Safety Plan

SITE HEALTH AND SAFETY PLAN

ITT FLUID PRODUCTS CORPORATION 1200 FLOWER STREET BURBANK, CALIFORNIA

ENVIRON Corporation SITE HEALTH AND SAFETY PLAN

This Site Health and Safety Plan is specifically prepared for:

Project Location 1200 Flower Street and off-site locations at Flowere Street and Alameda Ave., and Irving Avenue and Cosmic Way, Burbank and Glendale, California

Case Number 04-3484R&T

ALL PERSONNEL PARTICIPATING IN THE FIELD MUST BE TRAINED IN THE GENERAL AND SPECIFIC HAZARDS UNIQUE TO THE JOB AND, IF APPLICABLE, MEET RECOMMENDED MEDICAL EXAMINATION REQUIREMENTS. ALL SITE PERSONNEL AND VISITORS SHALL FOLLOW THE GUIDELINES, RULES, AND PROCEDURES CONTAINED IN THIS SAFETY PLAN. THE PROJECT MANAGER OR SITE HEALTH AND SAFETY OFFICER MAY IMPOSE ANY, OTHER PROCEDURES OR PROHIBITIONS BELIEVED TO BE NECESSARY FOR SAFE OPERATIONS.

THIS PLAN IS PREPARED TO INFORM ALL FIELD PERSONNEL, INCLUDING ENVIRON CONTRACTORS AND ENVIRON SUBCONTRACTORS, OF THE POTENTIAL HAZARDS ON THE SITE. HOWEVER, EACH CONTRACTOR OR SUBCONTRACTOR MUST ASSUME DIRECT RESPONSIBILITY FOR ITS OWN EMPLOYEES' HEALTH AND SAFETY.

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Appendix - Hazardous Property Information

Figure 1 - Vicinity Map

Figure 2 - Site Map

I. INTRODUCTION

A. SITE LOCATION: 1200 Flower Street and off-site locations at Flower Street and Alameda Ave., and

Irving Avenue and Cosmic Way, Burbank and Glendale, California.

В.	PLAN PREPARED:	Name Kim Little	Date November 2, 1993
c.	PLAN APPROVED:	Project Manager Rebekah Wale	Date 1 1/03 /9 3
		HSC Kim Little	Date
D.	PLAN REVISED:	Name	Date
E.	REVISION APPROVED:	Project Manager	Date
		HSC	Date
F.	THE POSSIBLE HAZARDS ON THIS JOB . Mechanical hazards (heavy equipment, truct to low levels of Volatile Organic Compound	ks, traffic during off-site well in	

G. REQUIRED PERSONAL PROTECTIVE ITEMS AND EQUIPMENT FOR THIS PROJECT:

bromoform, vinyl chloride).

Hardhat, steel-toed boots, and gloves during sampling; also, OVM or OVA, SKC Personal Sampling Pump, and dreager pump and tubes (1,1-DCE, benzene, 1,2-DCA, carbon tetracholride, cholorform,

II. PERSONS RESPONSIBLE AND INVOLVED

A. PROJECT MANAGER Rebekah Wale

Health and Safety Responsibilities Overall responsibility for project compliance with health and safety plan.

B. SITE SUPERVISOR Mike Barnes

Health and Safety Responsibilities Implementation of the site-specific health and safety plan for all field-related activities.

C. SITE HEALTH AND SAFETY OFFICER Same as site supervisor.

Health and Safety Responsibilities

D. OTHERS Mark Katchen, CIH

Health and Safety Responsibilities Responsible for providing health and safety consultation for the project.

E. SUBCONTRACTORS

Health and Safety Responsibilities Responsible for the safe operation of equipment while on-site and offsite for the health and safety of drilling contractor workers.

III. FACILITY BACKGROUND

- A. FACILITY BACKGROUND AND DESCRIPTION: Facility manufactures aerospace components. It is located in a commercial and light industrial area of Burbank. ITT is in the process of moving it's operations, and has therefore demolished a number of buildings, with plans to demolish the remaining structures.
- B. SITE HISTORY (USE OF SITE, ORIGIN OF CONTAMINATION): Facility is an aerospace manufacturing facility. A number of the on-site buildings have been demolished. The remaining buildings are currently occupied and are used by ITT. Perched and upper-water bearing groundwater at the site is known to contain diesel (from underground storage tank releases), detectable levels of petroleum hydrocarbons, and various volatile organic compounds (see page 5 for listing and PELs).
- C. HAZARDOUS INCIDENCE HISTORY (HISTORY OF INJURIES, EXPOSURE, CHEMICAL SPILLS, COMPLAINTS, ETC.): Unknown.
- D. PURPOSE OF ACTIVITY/OBJECTIVE OF ENVIRON'S WORK (CHARACTERIZATION, REMEDIAL ACTIONS, EXCAVATION, TRENCHING; INCLUDE LOCATION OF AREAS OF KNOWN OR SUSPECTED CONTAMINATION): ENVIRON will be on-site to oversee the installation of five on-site, and five off-site groundwater monitoring wells. A map showing the location of the proposed wells is attached at the end of this plan.
- E. SITE STATUS (ACTIVE, INACTIVE, UNKNOWN): Active.
- F. SURROUNDINGS (LOCATIONS OF CITY, ROADS, RESIDENCES, BUSINESS, NATURAL FEATURES, GRADIENTS, TANKS, ETC): Commercial, light industrial.
- G. SITE MAP (ATTACHED MAP AT END OF THIS PLAN SHOWING SALIENT FEATURES, INCLUDING LOCATIONS OF ENVIRON'S WORK AND LOCATIONS OF CONTAMINATED AREAS). See Figures 1 and 2.

H. CLIMATE

AVERAGE WIND SPEED AND DIRECTION: 5-10 mph

MEAN HIGH TEMPERATURE: 80

MEAN LOW TEMPERATURE: 70

IV. IDENTIFIED CHEMICAL CONTAMINANTS

A. IDENTIFIED CHEMICAL CONTAMINANTS KNOWN TO BE PRESENT

List chemical contaminants that have been identified, their concentration, and the environmental media in which they are present. Hazardous property information for selected chemicals appears in the appendix. Review this information for all chemicals listed below. If chemicals are not listed in the appendix, you must enter the hazardous property information in the appendix in the spaces provided.

	Environmental	
Chemical	Media	Permissible Exposure Limit (PEL
(Enter Code)		
bromoform	G₩	0.5 ppm
benzene	G₩	1 ppm
1,1-dichloroethene		
(vinylidene chloride)	G₩	1 ppm
vinyl chloride	G₩	1 ppm
1,2-DCA	G₩	1 ppm
carbon tetrachloride	G₩	2 ppm
chloroform	G₩	2 ppm
1,1,2-TCA	GW	10 ppm
naphthalene	G₩	10 ppm
1,3,5-trimethylbenzene	GW	25 ppm
trichloroethene	G₩	25 ppm
tetrachloroethene (PCE)	G₩	25 ppm
toluene	G₩	1 00 ppm
1,1-dichloroethane	GW	1 00 ppm
1,1,1-trichloroethane (1,1,1-TCA)		
(methyl chloroform)	GW	350 ppm
trichloroflouromethane	G₩	1000 ppm
cis/trans 1,2-DCE	G₩	n/a
bromodichloromethane	G₩	n/a

B. SUSPECTED CHEMICAL CONTAMINANTS ON-SITE

List chemical contaminants that are suspected to be present.

	_	Environmental		
Chemic	al	Media	 	
		(Enter Code)		

See previous table

IV. IDENTIFIED CHEMICAL CONTAMINANTS (Continued)

Codes for environmental media:

SI Sludge
GW Ground water
SW Surface water
LW Liquid waste

So Soil
A Air
Other - Specify

C. CHEMICAL CONTAMINANTS CHARACTERIZATION

Has the site been adequately characterized to the best of your knowledge?

Yes No XX

If yes, list applicable references or previous reports/studies.

V. GENERAL WORK PRACTICES

•	No one will be permitted to engage in work operations alone.	
•	Smoking, eating, drinking, and chewing gum or tobacco will not be permitted within the work zones.	
•	Personnel should keep track of weather conditions and wind direction to the extent they could affect potential exposure.	
•	Personnel should be alert to any abnormal behavior on the part of other workers that might indicate distress, disorientation, or other ill effects.	
•	Personnel should never ignore symptoms that could indicate potential exposure to chemical contaminants. These should be immediately reported to their supervisor or the Site Health and Safety Officer.	-
•	Others (specific to tasks: trenching safety, drill rig safety, site entry, etc.)	

VI. SITE CONTROL/WORK ZONES

A. DESCRIBE LOCATIONS OF EXCLUSION ZONE, HOT LINE, CONTAMINATION REDUCTION ZONE, AND DECONTAMINATION AREA AND SUPPORT ZONE. SHOW LOCATIONS ON SITE PLAN. The exclusion zone will be that area immediately surrounding the well that is being installed. It will be the responsibility of the site health and safety officer to prevent unauthorized personnel from entering the exclusion zone. When necessary, such as in high traffic areas (off-site installation), the exclusion zone will be delineated with barricade tape, cones, and/or barricades. It is not anticipated that a contamination reduction zone, decontamination area, or support zone will be required.

B. DEFINE THE SITE CONTROL/SECURITY MEASURES (FENCING, LOCKED GATES, KEYS, SECURITY GUARDS, FLAGGING, ETC.). Site is fenced. Barrier tape or cones will be used to keep unauthorized personnel form entering the area.

C. DESCRIBE SAFETY PLAN LOCATIONS. A copy of the health and safety plan will be kept in the ENVIRON field vehicle at all times.

VII. SITE RESOURCES

SITE RESOURCES LOCATIONS

Toilet facilities: on-site

Drinking water supply: on-site

Telephone: in ENVIRON truck or field vehicle

Radio: None available.

Other:

VIII. HAZARD MITIGATION

Identify procedures to mitigate all hazards listed in Section XIV by placing the task number next to the appropriate mitigating measure. Listing of standard procedures is not inclusive. A specific procedure must be entered to mitigate each hazard identified in Section XIV.

Activity

List Number	A. Mechanical Hazards
NE	Do not stand near backhoe buckets and earthmoving equipment.
1	Verify that all equipment is in good condition.
NE	Do not stand or walk under elevated loads or ladders.
NE	Do not stand near unguarded excavations and trenches.
NE	Do not enter excavations or trenches over 5 feet deep that are not properly
	guarded, shored, or sloped.
1	Consult HSC if other mechanical hazards exist.
	· · · · · · · · · · · · · · · · · · ·
	B. Electrical Hazards
1	Locate and mark buried utilities before drilling.
1	Utilities located by:
1	Maintain at least 10-foot clearance from overhead power lines.
. 1	Contact utility company for minimum clearance from high power lines.
1	If unavoidably close to buried or overhead power lines, have power turned off, with circuit
	breaker locked and tagged.
1	Properly ground all electrical equipment.
1	Avoid standing in water when operating electrical equipment.
1	If equipment must be connected by splicing wires, make sure all connections are properly taped.
1	Be familiar with specific operating instructions for each piece of equipment.
	C. Chemical Hazards
1	Use personal protective equipment indicated in Section X.
1	Conduct direct reading air monitoring to evaluate respiratory and explosion hazards (list
1	instrument, action level, monitoring location, and action to be taken in Section IX).
1	Consult HSC for personal air monitoring.
1	Commit too to become an montaning.

VIII. HAZARD MITIGATION (Continued)

Activity

List Number

D. Temperature Hazards

1. Heat Stress

When temperature exceeds 70°F, take frequent breaks in shaded area. Unzip or remove coveralls during breaks. Have cool water or electrolyte replenishment solution available. Drink small amounts frequently to avoid dehydration. Count the pulse rate for 30 seconds as early as possible in the rest period. If the pulse rate exceeds 110 beats per minute at the beginning of the rest period, shorten the work cycle by one-third.

NE E. Confined Spaces

Confined spaces include trenches, pits, sumps, elevator shafts, tunnels, or any other area where circulation of fresh air is restricted or ability to readily escape from the area is restricted. Consult HSC prior to entering confined space.

- Obtain permit for confined space entry.
- Monitor O₂ and organic vapors before entering. If following values are exceeded, do not enter:
 - O₂ less than 19.5% or greater than 25%.
 - Total hydrocarbons greater than 5 ppm above background, if all air contaminants have not been identified.
 - Concentrations of specific contaminants exceeding action level in Section IX if all contaminants are identified.
- Monitor O₂ and organic vapors continuously while inside confined space. If values
 cited in Section IX are exceeded, evacuate immediately. Record instrument readings.
- At least one person must be on standby outside the confined space who is capable of pulling workers out of confined space in an emergency.
- Use portable fans or blowers to introduce fresh sir to confined spaces whenever use of respirator is required.
- Work involving the use of flame, arc, spark, or other source of ignition is prohibited within a confined space.

VIII. HAZARD MITIGATION (Continued)

Activity

List Number

NE

F. Radiation Hazards

If radiation meter indicates 2 mR/hr or more, leave the area and consult HSC.

NE

G. Biohazard

Poison oak, poison ivy.

Infectious waste. Rabid animais.

Ticks, mosquitoes, and other insects (disease carriers or poisonous). Avoid breathing dust in dry desert or central valley areas (valley fever).

...

Biological or animal laboratories.

Poisonous reptiles.

NE = NOT EXPECTED

IX. AIR MONITORING

Air monitoring should be conducted with instruments selected to measure contaminants to which employees may be exposed. Measurements should be taken within the breathing zones of workers. If action levels are reached for a 1-minute reading, appropriate action must be taken.

A. GASES AND VAPORS

Instrument & Date of Calibration	Calibration Gas Standard	Frequency/ Duration of Air Monitoring	Action Level ^{(a)(b)} Above Background (Breathing Zone)	Action
Organic Vapor Meter	internal	every 5-10 minutes	1 ppm greater than background sustained for 5 minutes	use dreager pump and tubes (see comments at bottom of page)

- (a) Action Levels for "Known contaminants" should be based upon each contaminant's Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV).
- (b) Action levels for unknown contaminants are based upon the following:

HNu or OVA Measurements in Breathing Zone Reading for 1 minute

Background	Level D
>0-5 ppm above background	Level C
5-500 ppm above background	Level B
500-1000 ppm above background	Level A

Comments: If sustained readings above 1 ppm are detected, conduct sampling with dreager tubes (bromoform, benzene, vinyl chloride, 1,2-DCA). If Benzene is identified with dreagers at 0.75 ppm to 7.50 ppm, use 1/2-mask with organic vapor cartridge. If higher levels of benzene are detected, or if other listed contaminants (vinyl chloride, 1,1-DCE, bromoform, vinyl chloride) are present at 75% of their PEL's, or if substance cannot be identified, leave area and consult HSC.

IX. AIR MONITORING (Continued)

 Instrument & Date of Calibration	Action Level Above Background (Ambient Air)	Frequency/Duration of Air Monitoring	Action
OXYGEN DEFICIENCY I	Not Expected		
 Instrument & Date of Calibration	Action Level (Ambient Air)	Frequency/Duration of Air Monitoring	Action
OTHER INSTRUMENTS	See previous page for d	iscussion of compounds/action	levels.
Instrument & Date of Calibration	Action Level (Breathing Zone Ambient Air)	Frequency/Duration of Air Monitoring	Action

use the following tubes:

benzene, vinyl chloride, bromoform, 1,2-DCA. See notes on page 13 for action.

sustained readings of

1 ppm

<u>Date</u>

Draeger pump/tubes

X. REQUIRED PERSONAL PROTECTIVE AND RELATED SAFETY EQUIPMENT

Place the activity number from Section XIV next to each item of personal protective equipment required for that task. All personal safety must meet ANSI standards or equivalent.

LEVEL

Α.

B.

C.

D. XX

Comments:

Head

1

Hardhat

Eye/Face

1

Safety Glasses

Faceshield

Chemical Goggles

Hand

1

Neoprene

Nitrile

P

PVC

Viton

Underglove

other: = 4-H

Body

Full Encapsulating Suit:

Two Piece Rainsuit, Material =
One Piece Splash Suit, Material =

Hooded Tyvek Suit

Hooded Tyvek/Saranex Suit Hooded Tyvek/Polyethylene Suit

Cloth Coveralls
High Visibility Vest

Other

Lung

SCBA (open circuit, pressure demand):

1/2-Mask Respirator, cartridge = organic vapor (if leveling up to C

for benzene)

Full Face Respirator, cartridge =

Other

Ear

Earplug, type = foam, if elevated noise levels

Earmuff, type =

Foot

1 Steel-toed Boots, type = leather

Disposable Overboots, type =

Other Safety Equipment

Ventilation blower/fan

As needed

Traffic cones

Lifeline harness

As needed

Barrier tape

Radiation Dosimeter

Blast alarm

Ground fault circuit interrupter

Comments:

XI. DECONTAMINATION PROCEDURES

- A. EQUIPMENT (SAMPLING, CONSTRUCTION, ETC.) DECONTAMINATION (SOLVENTS USED, EQUIPMENT USED, METHOD OF DISPOSAL). ATTACH SITE DECONTAMINATION MAP AS NECESSARY. All undedicated sampling equipment and sampling meters (if applicable) will be cleaned prior to and between each use. Decontamination fluids will be contained and stored on-site in 55-gallon drums pending appropriate disposal.
- B. PERSONNEL DECONTAMINATION (SOLVENTS USED, METHOD OF SOLVENT DISPOSAL; INCLUDE DECONTAMINATION METHOD OF PPE AND DISPOSAL OF PPE). ATTACH DECONTAMINATION MAP AS NECESSARY.

 Decontamination of employees is not expected; however, all disposible PPE will be contained in 55-gallon drums on-site pending appropriate disposal.
- C. INVESTIGATION-DERIVED MATERIAL DISPOSAL
 - 1. Drill cuttings/well water: on-site 55 gallon drums
 - 2. Decontamination solutions: on-site 55 gallon drums
 - 3. Other

XII. DOCUMENTATION

ENVIRON PERSONNEL TRAINING AND MEDICAL RECORDS ARE AT ENVIRON CORPORATION, ONE PARK PLAZA, SUITE 700, IRVINE, CALIFORNIA. RECORDS WILL BE MAINTAINED ON-SITE AS NECESSARY.

A. PROJECT PERSONNEL LIST AND SAFETY PLAN DISTRIBUTION RECORD

1. ENVIRON Employees

All project staff must sign indicating they have read and understand the Site Health and Safety Plan. A copy of this Site Health and Safety Plan must be made available for their review and readily available at the job site.

Date

Employee Name/Job Title

Distributed

Signature

2. Contractors, Subcontractors

A copy of this safety plan shall be provided to contractors and subcontractors who may be affected by activities covered under the scope of this Site Health and Safety Plan for their information only, although the contractors and subcontractors remain responsible for the safety of their own employees. All contractors and subcontractors must comply with applicable OSHA, EPA, and local government rules and regulations.

Date

Firm Name

Contract Person

Distributed

XII. DOCUMENTATION (Continued)

B. HEALTH AND SAFETY MEETING - ALL PERSONNEL PARTICIPATING IN THE PROJECT MUST RECEIVE INITIAL HEALTH AND SAFETY ORIENTATION. THEREAFTER, A BRIEF TAILGATE SAFETY MEETING IS REQUIRED AS DEEMED NECESSARY BY THE SITE HEALTH AND SAFETY OFFICER (OR AT LEAST ONCE EVERY 10 WORKING DAYS).

Date	Topics	Name of Attendee	Employee Firm Name	Initials
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XII. DOCUMENTATION (Continued)

C. <u>VISITOR</u> - IT IS ENVIRON'S POLICY THAT VISITORS MUST FURNISH THEIR OWN PERSONAL PROTECTIVE EQUIPMENT. ALL VISITORS ARE REQUIRED TO SIGN THE VISITOR LOG AND COMPLY WITH HEALTH AND SAFETY PLAN REQUIREMENTS. IF THE VISITOR REPRESENTS A REGULATORY AGENCY CONCERNED WITH SITE HEALTH AND SAFETY ISSUES, THE SITE HEALTH AND SAFETY OFFICER SHALL ALSO IMMEDIATELY NOTIFY HSC.

VISITOR LOG

Name of Visitor	Firm Name	Date of Visit	Signature	
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XIII. CONTINGENCY/EMERGENCY INFORMATION

A.	REQUIRED EMERGEN	ICY EQUIPMENT LOCATION	
	Safety shower/eyewash:		
	First aid kit:		
	Fire extinguisher:		
	Other:		
B.	EMERGENCY TELEPH	IONE NUMBERS	
	Ambulance:	911	
	Police:		
	Fire department:	011	
	Hospital:	010 047 5111	
	Client contact:	Theresa Olmstead 818-953-2119	
	Poison Control Center:	(800) 233-3360	
	in San Francisco	(000) 404 0000	
	CHEMTREC:	(800) 424-9300	
	Project Manager	Office (714)261-5151	Home
	HSC	Office <u>(714)261-5151</u>	Home
.	 Name of person mages. Telephone number Name of person(s) Nature of emergences. Actions already take Recipient of call should	aking call at location of person making call exposed or injured cy ten hang up first—not the caller.	owing information should be provided: TE TO NEAREST HOSPITAL. DESCRIBE
D.	NARRATIVELY THE DETERMINE IF THEY Proceed northwest on	ROUTE TO THE HOSPITAL. HAS I WILL HANDLE A CHEMICAL EX Flower Street to Alameda Ave. Turn	HOSPITAL BEEN CONTACTED TO
	EMERGENCIES SUCH FAILURE. INCLUDE CONTINGENCY PLAN In case of emergency,	EMERGENCY SIGNALS AND EVAN DOCUMENT HAS BEEN PREPAR all personnel will meet by the east go	NJURY, PIPE OR OTHER EQUIPMENT CUATION ROUTES. IF FORMAL

POST AT JOB SITE (AS APPROPRIATE)

XIV. HAZARD ANALYSES

List all activities in the Job Activity Column and assign a number to each activity (example: 1. Ground Water Sampling)

Identify which categories of hazard exist at each activity.

EXAMPLE

Activity Number	Job Task		Mech.	Elec.	Chem.	Тетр.	Acoust.	Fire or Explos.	O ₂ Deficiency- Confined Space	Bio- hazard
1	well installation	1	x	x	x	x	x			
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APPENDIX

to Attachment 5B

HAZARDOUS PROPERTY INFORMATION

APPENDIX
Hazardous Property Information

Check if Present	Material	Water Solubility*	Specific Gravity	Vapor Density	Flash Point *F	Vapor Pressure'	LEL UEL	LD _{se} mg/kg	TLV- TWA*	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard ⁱ Property	Dermal ^t Toxicity	Acute ⁱ Exposure Symptoms
	Acrolein	22%	0.8410	1.9	-15	214 mm	2.8% 31%	46	0.1 ppm	5 ppm	0.16	BCED	вј	ABDFGHIKL MNOPQR
,	Acrylonitrile	7.1%	0.8060	1.8	30	83 mm	3% 17%	82	2 ppm	4,000 ppm	17	BCEGO	DIG	FGIKLMNOR
xx	Benzene	820 ppm	0.8765	2.8	12	75 mm	0.339 % 7/1 %	3800	1 ppm	2,000 ppm	12	вссо		BCDFHIKLM NOQR
	Bromomethane	0.1 g	1.732	3.3	None	1.88 atm	13.5%° 14.5%		5 ppm²	2,000 ppm	No odor	CD		BCDEUKLM NOQR
	Bromodichloromethane	Insolubie	1.980	-	None		Non-flam	916	None established	None specified	-	cgo		BIMN
	Bromoform	0.01 g	2.887		None	5 mm	Non-flam	1,147	0.5 ppm	n/a	1.3	CED		BCDKLM
	Carbon Tetrachloride	0.08%	1.5967	5.3	None	91 mm	Non-flam	2,800	5 ppm²	300 ppm	96	CD	JGH	ABCFGHKM O
	Chlorobenzene	0.01 g	1.1058	3.9	84	8.8 mm	1.3% 9.6%	2,910	10 ppm	2,400 ppm	0.68	BCD		BCFIKLMNO PQR
	Chloroethane	0.6 g	0.8978	2.2	-58	1.36 atm	3.8% 15.4%	1	1,000 ppm	20,000 ppm		BCD		BFHIKMNP
	2-Chloroethylvinyl Ether	Insoluble	1.0475	3.7	80	30 mm		250	None established	None specified		BCD		NIM
	Chloroform	0.8 g	1.4832	4.12	None	160 mm	Non-flam	800	10 ppm³	1,000 ppm	85	CD		BCDGIKLM N
	Chloromethane	0.74%	0.9159	1.8	32	50 atm	7.6% 19%		50 ppm³	10,000 ppm		BCD		ABCDEFGIJ KLOQR
	Dibromochloromethane	Insoluble	2.451		_	-		848	None established	None specified		BCD		венімиро
	I,1-Dichloroethane (DCA)	0.1 g	1.1757	8.4	22	1 82 mm	6% 16%	725	100 ppm	4,000 ppm	5	BCD		AGHIMNO
	1,2-Dichloroethane	0.8%	1.2554	3.4	55	87 mm	6.2 % 16 %	670	10 ppm³	1,000 ppm	6	BCDG		BCFGOLMN Q

APPENDIX Hazardous Property Information

	Inizations Property Information													
Check if Present	Material	Water Solubility*	Specific Gravity	Vapor Density	Flash Point °F	Vapor Pressure	LEL UEL	LD _m mg/kg	TLV- TWA ^c	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard' Property	Dermal' Toxicity	Acute ⁱ Exposure Symptoms
XX	1,1-Dichloroethylens (DCE)	2,250 mg/l @ 77°F	1	3.4	3	591 mm	7.3% 16.0%	200	S ppm²	None specified		BCD		BIMN
	Trans-1,2- Dichloroethylene	Slightly soluble	1.2565	-	36	400 mm	9.7% 12.8%		None established	None specified	17	BCD		ABFILOQ
	1,2-Dichloropropane	0.26%	1.583	3.9	60	40 mm	3.4% 14.5%	1,900	75 ppm	2,000 ppm	50	BCD		ABGHIKMN O
	Cis-1,3-Dichloropropane	insolubie	1.2	3.8	83	28 mm	5% 14.5%		l ppnt	None specified		BCD		ABGIKLMNP
	Trans-1,3- Dichloropropane	Insclubic	1.2	3.8	. 83	28 mm	5% 14.5%		l ppm²	None specified		BCD		ABGIKLMNP
	Ethylbenzene	0.015 g	0.867	3.7	59	7.1 mm	1.0% 6.7%	3,500	100 ppm	2,000 ppm	2.3	BCD		ABFHIKLMN PQR
	Methylene Chloride	Slightly soluble	1.335	2.9	None	350 mm	i2%° unavailable	167	50 թթուհ	5,000 ppm	250	CED	CIF	BCIKLMNPR
	1,1,2,2-Tetrachloroethane	0.19%	1.5953	5.8	None	5 mm	Non-flam		1 ppm²	150 ppm	3-5	CD	2	ABCFHIKLM NOQ
ХХ	Tetrachioroethylene	0.15 g/ml	1.6227	5.8	None	15.8 mm	Non-flam	8,850	50 ppmh	500 ppm		CD		ACFHIKLMN P
	1,1,1-Trichloroethans (TCA)	0.7 g	1.3390	4.6	None	100 mm	8.0%* 10.5%	10,300 ,	_ 350 ppm	1,000 ppm	20-400 (500-1,000)	BCED		ABEFHIKLN OP
	1,1,2-Trichloroethane	0.45	1.4397	4.6	None	19 mm	6%* 15.5%	1,140	10 ppm	500 ppm	0	С		DEFGHIKM NOPQ
xx	Trichloroethylene (TCE)	0.1%	1.4642	4.5	904	58 mm	12.5% 90%	4,920	50 ppm²	1,000 ppm	28	вс		BFKLNOPQ
	Trichlorofluoromethane	0.11 g	1.494	-	None	0.91 atm	Non-flam		1,000 ppm	10,000 թթու	5	CD		BFHKLQ
	Toluene	0.05 g	0.866	3.2	40	22 mm	1.3% 7.1%	5000	100 ppm	2,000 ppm	2.4	ВС	вне	DEFHIKLMN OPQ

					н		PPENDIX Property In	formati on						4	
Check if Present															
	Vinyl Chloride	negligible	.09100	2.24	; -108	3.31 atm	3.6% 33%	500	1 ppm	None Specified	3000	BCEG	DIG	ABFHIKLMN	
METALS				•											
	Arsenic	•	5.727	n/a	None	o/e	:		0.2 mg/m³	None specified		CEG	CIG	ACDGJMOQ R	
	Beryllium	•	1.85	n/a	None	n/a	į f		2 μg/m³	None specified		С		UMNR	
	Cedmium	•	8.642	n/a	None	n/a	ſ	225	0.05 mg/m³	40 mg/m³		С		ABOHIKLM NQR	
	Chromium	•	7.20	n/a	None	n/a	1		0.5 mg/m³h	500 mg/m³		c		FMNQ	
	Copper	•	8.92	n/a	None	n/a	1		0.1 mg/m³	None specified		С		FGUMOR	
	Load	•	11.3437	n/a	None	n/a	ť		50 μg/m³	None specified		c		ACDFGKOQ R	
	Mercury	•	13.5939	7.0	None	0.0012 mm	•		50 μg/m³h	28 mg/m³		С		AGLMNQ	
	Nickei	•	8.9	n/a	None	n/ 4			1 mg/m²	None specified		С		ронімир	
	Silver	•	10.5	n/a	None	2/4	i	,	0.01 mg/m²	None specified		C		IN	
	Thellium	•	11.85	n/a	None	n/a	t		0.01 mg/m³	20 mg/m³		С	ВG	ABGLNOQ	
	Zinc	•	7.14	n/a	None	n/a	•		None established	None specified		С		DF	
MISCELLA	NEOUS						•								
	Asbestos	Insoluble	2.5	p/a	None	n/a	Non-flam		0.2 fibers/cc	None specified		cg		MN	
	Cyanides	58-72%		n/a	None	n/a	Non-flam		5 mg/m³			CE		FKLMPQ	

APPENDIX Hazardous Property Information

Check if Present	Material	Water Solubility	Specific Gravity	Vapor Density	Flash Point *F	Vapor Pressure	LEL UEL	LD _n mg/kg	TLV- TWA*	IDLH Level	Odor Threshold or Warning Concentration (ppm)		Dermal ^k Toxicity	Acute ^l Exposure Symptoms
	PCB (generic)	Slightly	-	n/a	None	n/a	Non-flam		1.0 μg/m³i	None specified		cg		СНГЬО
	Phenoi	8.4%	1.0576	3.2	175	0.36 mm	1.8% 8.6%	414	5 ppm	100 ppm	0.04	c		ABCDGIKM NOQR
	Xylene	0.00003%	0.8642	3.7	84	9 mm	1.1% 7%	5,000	100 ppm	10,000 ppm	0.5-200 (200)	BCD		ABFHIKLMN PQ
	Acetone	Soluble	0.8	2.0	-4	400 mm	2.6% 12.8%	9,750	750 ppm	10,000 ppm	13	BCD	DI	н
	Chromic Acid	Soluble	1.67-2.82	n/a	None	n/a	Non-flam		0.05 mg/m³	None specified		ACEG		дні
ХХ	Diesel Fuel	Insoluble	0.81-0.90	-	130	-	0.6-1.3 6-7.5		None established	None specified	0.08	вс	ABC	IN
	Gasoline	Insoluble	0.72-0.76	3.4	-45	Variable	1.4% 7.6%		300 ppm	None specified	0.005-10 x0.25	CD	ΑВ	N
	Kerosene	Insoluble	0.83-1.0	_	100-165	5	0.7% 5.0%		None established	None specified	1.0	BCD	AB	IN

SITE-SPECIFIC SUBSTANCES

(Ad	<u>d bazardous pe</u>	roperty information	on any substances	that are of concern at the	site but are not listed above.)	

	APPENDIX Hazardous Property Information													
Check if Present														

					н	Al azardous P	PPENDIX Toperty L			<u></u>			··-	
Check if Present	Material	Water Solubility*	Specific Gravity	Vapor Density	Flash Point °F	Vapor Pressure	LEL UEL	LD ₁₀ mg/kg	TLV- TWA	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazardi Property		Acute ^l Exposure Symptom
Water solu materials a gasoline co	ATIONS AND FOOTNO bility is expressed in dif are water soluble at the pastituents, such as benze	ferent terms i part per millio me, toluene, s	on or part po and xylene, v	er billion lev will also be f	el. Gasoline, ound in soluti	for example, i on in the grou	is insoluble i	a the grees ser	ase, and will	be found as	a discrete layer on top			
Solui	er solubility expressed a bility of metals depends ral chlorinated bydrocar	on the compo	und in which	h they are p	resent.		in the prese	nce of high ea	ergy ignition	source or w	ill form explosive mixto	ures at tem	peratures	above
Prac	r. tically non-flammable un essed as mm Hg under :													
	osive concentrations of a					IA Permissibl	e Ernosure	limits (PELa)	except where	noted in h	and i.			
TLV	TWA adopted by the A	merican Conf	erence of G	overnmental	Industrial Hy	gienists (ACG	IH), which	s lower than t	he OSHA PE	L.				
. A B	TWA recommended by - corrosive - flammable - toxic - volatile - reactive - radioactive - carcinogen - infections	ine National	Institute for	Uccupation.	al Safety and	Health (NIOS	a). A TLV	or PEL has no		ed by ACGI	H OF USHA.			

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APPENDIX Hazardous Property Information														
Check if Present	Material	Water Solubility*	Specific Gravity	Vapor Density	Flash Point *F	Vapor Pressure	LEL UEL	LD _m mg/kg	TLV- TWA*	IDLH Level	Odor Threshold or Warning Concentration (ppm)	Hazard De Property To	ermat' Er	Acute ^j rposure mptoms
Skim 1 - + ++	B - sligh C - mod	igible penetra it penetration erate penetra	ation (solid-po (solid-nonpo tion (liquid/s	olar) lar) olid-nonpol	•		; }				,			
+++ System E F G	nic Potency - slight hazard - L lethal dose for 70 - moderate hazard lethal dose for 70 - extreme hazard	hg man = 1 - LD _m = 50- kg man = 1 LD _m = 10-5	,000 mg/kg pint-1 quar -500 mg/kg ounce-1 pin o mg/kg	· · · · · · · · · · · · · · · · · · ·			:							
Local H I J	lethal dose for 70 Potency - slight - reddening - moderate - irrita - extreme - tissue o	of skin	ntion of skin	d)	·		ı							
Acute A B C D	Exposure Symptoms - abdominal pain - central nervous s - comatose - convulsions - confusion	ystem depres	tion											
F G H I	dizzinets diarrhea drowniness eye irritation fever				,		:	*	ter	·				
K L M N O	 headache nausea respiratory syster akin irritation tremors unconsciousness 	u irritation		!										
Q R	vomiting weakness													



